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[54] **SIDEBAND SIGNALING WITH PARITY BIT SCHEMES**

[75] Inventors: **Jerry V. Hauck**, Fremont; **Eric Cabot Hannah**, Pebble Beach, both of Calif.

[73] Assignee: **Intel Corporation**, Santa Clara, Calif.

[*] Notice: This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).

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[52] **U.S. Cl.** **714/6**; 714/18; 714/800

[58] **Field of Search** 395/182.04, 182.16, 395/185.01; 371/30, 32, 33, 37.4, 37.7, 49.1

[56] **References Cited**

U.S. PATENT DOCUMENTS

4,312,069	1/1982	Ahamed	371/37
4,488,302	12/1984	Ahamed	371/40.1
4,541,091	9/1985	Nishida et al.	371/39.1
4,606,022	8/1986	Suzuki et al.	370/85
5,040,179	8/1991	Chen	371/37.1
5,195,093	3/1993	Tarrab et al.	371/3

OTHER PUBLICATIONS

Transmission Code For High–Speed Fibre–Optic Data Networks, by A.X. Widmer & P.A. Franaszek, Electronic Letters, Mar. 17, 1983, vol. 19, No. 6, pp. 202–203.

A DC–Balanced, Partitioned–Block, 8B/10B Transmission Code, by A.X. Widmer & P.A. Franaszek, IBM J. Res. Develop., Sep. 1984, vol. 27, No. 5, pp. 440–451.

Primary Examiner—Dieu-Minh T. Le

Attorney, Agent, or Firm—William H. Murray; N. Stephan Kinsella

[57] **ABSTRACT**

A plurality of parity bits is generated for serial transmission of a word of data bits, and the plurality of parity bits is modified before transmission to encode a sideband signal. The word of data bits and the plurality of modified parity bits are serially transmitted. In another embodiment, a serially-transmitted code word comprising a word of data bits and a plurality of parity bits is received, wherein the parity bits have been generated by an encoder and transmitted with the data bits. It is determined whether the parity bits were modified by the encoder to encode a sideband signal, and at least one of error detection and error correction is performed using the parity bits.

41 Claims, 8 Drawing Sheets